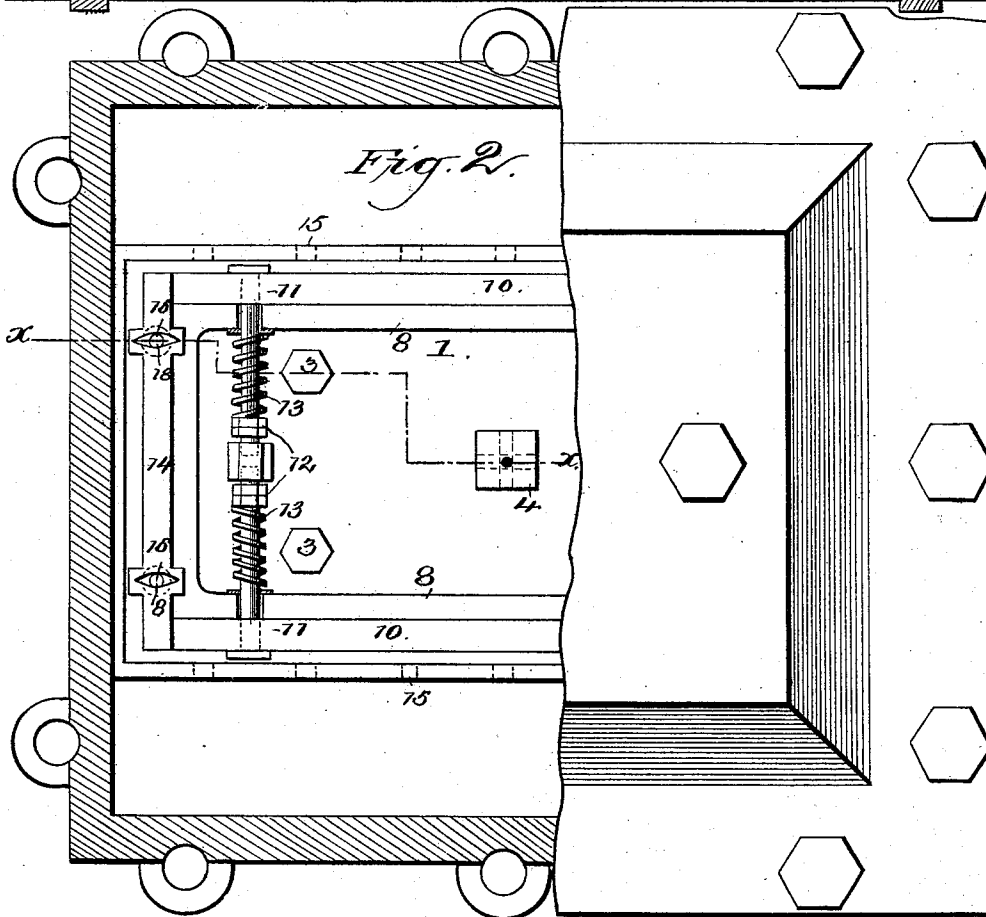
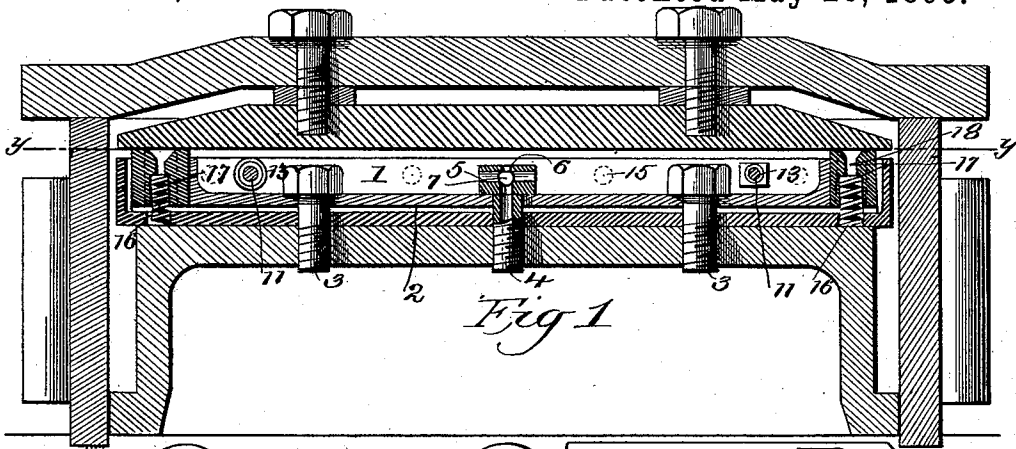


(No Model.)

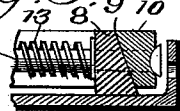
H. A. NICHOLSON.
BALANCED SLIDE VALVE.

No. 539,996.

Patented May 28, 1895.



Witnesses
J. M. Nichols
Chas. E. Taper

Fig. 3. 9 10

Hans Albert Nicholson
By John Wedderburn
Attorney

UNITED STATES PATENT OFFICE.

HANS ALBERT NICHOLSON, OF POCATELLO, IDAHO.

BALANCED SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 539,996, dated May 28, 1895.

Application filed November 28, 1893. Serial No. 492,294. (No model.)

To all whom it may concern:

Be it known that I, HANS ALBERT NICHOLSON, a citizen of the United States, and a resident of Pocatello, in the county of Bannock and State of Idaho, have invented certain new and useful Improvements in Balanced Slide-Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a union top slide valve and has for its object to provide simple means to permit the steam to pass from the exhaust chamber and lubricate the steam chest cover, to make the several parts adjustable to accommodate the various conditions, and which can be made to balance any main slide valve and can be lined up when necessary by placing liners between the parts.

With these and other objects in view the invention consists of the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a longitudinal sectional view of the improved device. Fig. 2 is a horizontal sectional view, on the line *y y*, Fig. 1, of a part of the device and a top plan view of the remaining portion of the same. Fig. 3 is a detail sectional view of a part of the device.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

Referring to the drawings, the numeral 1 designates a cast iron plate which is bolted to the top of any form of main slide valve as at 2 by five bolts 3 and 4, the bolt 4 being in the center and has drilled therein through the center of the head thereof, a hole 5 which is intersected by a smaller hole 6 through the top or head of the bolt as well as by another hole 7 also formed in the said head of the central bolt at a right angle to and intersecting the larger hole 6 and which permits the steam to pass from the exhaust chamber and lubricate the steam chest cover. The said plate 1 has four cast iron strips 8 thereon two of which are beveled as at 9 and are held to beveled sides 10 of the plate by four bolts 11 which pass through the said strips and the bearings of the plate and which have nuts

12 on their ends which may be tightened so as to regulate the tension of the strip on the plate. The said bolts 11 are encircled by coiled springs 13, arranged inside the plate and are held in place by the said nuts 12. The side strips are also held in position by cross strips 14, the side strips being protected by the outside wall of the plate through which are drilled holes 15 to give a direct steam pressure against the strips and force the latter against the beveled bearings of the plate and also against the steam pressed cover. The cross strips 14 are in the form of a double cross and are held against the steam chest cover by coiled steel springs 16 which are located in holes 17 drilled through the center of each cross strip and through each cross. The holes for the springs are intersected by smaller holes 18 for the purpose of lubrication. These crosses form a sufficient bearing against the steam chest cover and are also fitted in the ends of the plate so that the proper position of the strips is always maintained.

It will be obviously apparent that many minor changes in the construction and arrangement of the several parts might be made and substituted for those shown and described without in the least departing from the nature or spirit of the invention.

Having thus described the invention, what is claimed as new is—

1. In a valve of the character described, the combination with a main slide valve and steam chest cover, of a plate having two beveled sides, four strips engaging the sides of the plate, two of said strips being beveled, bolts for holding the said beveled strips to the sides of the plate coiled springs encircling the said bolts and located inside the plate locking-nuts engaging the said bolts, and cross strips, substantially as described.

2. In a valve of the class described the combination with a main slide valve and a steam chest cover of a plate having strips engaging the sides of the same the outside wall of the plate being provided with holes to give a direct steam pressure against the strips, a portion of the said strips being beveled to engage similar beveled surfaces on the sides of the plate and having a spring connection, substantially as described.

3. In a valve of the class described the com-

5 bination with a main slide valve and a steam
chest cover of a plate having two of its sides
beveled, four cast iron strips two of which
are beveled to fit against the beveled sides of
the plate, bolts for holding the said beveled
strips against the beveled sides of the plate,
having coiled springs thereon locking-nuts on
the said bolts to regulate the tension of the
strips on the plate, cross strips, also holding
10 the said side strips in position, the said side
strips being protected by the outside wall of
the plate, through which holes are drilled to
provide a direct steam pressure against the

strips, the said cross strips being in the form
of a double cross, each cross of which has a 15
hole drilled through the center of the strip on
opposite sides and springs mounted in said
holes in the crosses, substantially as de-
scribed.

In testimony whereof I have signed this 20
specification in the presence of two subscrib-
ing witnesses.

HANS ALBERT NICHOLSON.

Witnesses:

ANDREW MCARDLE,
JOHN KEHR.